

## **II. SUMMARY OF THE INVENTION AS CLAIMED**

The invention as now claimed is directed to **abrasion-resistant** tubular articles having a unique and highly desirable structure. More particularly, the claimed tubular articles have a composite structure comprising an inner layer or wall and an outer layer or wall. The inner layer is comprised of polytetrafluoroethylene and an outer wall which comprises a **combination** of polytetrafluoroethylene and inorganic filler. Applicants have discovered that an abrasion-resistant article having such a construction and composition provides a combination of properties that has been difficult, if not impossible, to obtain using prior art techniques. More particularly, the abrasion-resistant articles as now claimed possess high internal frictional efficiencies over wide temperature and load conditions as well as enhanced external crush and creep resistance. (Application, p. 1, ll. 8-15 and p. 6, ll. 6-20). Such articles are highly desirable for use in important application such as motion transmitting cable assemblies (see claims 24-28) as described in the present application at page 1, line 16 through page 2, line 6.

## **III. THE EXAMINER'S REJECTION AND SUMMARY OF THE INTERVIEW**

The Examiner had rejected the pending claims under 35 U.S.C. § 103 as being unpatentable over Sasaki, *et al.* (U.S. 5,789,047) in view of Giatras, *et al.* (U.S. 4,362,069) and Doose (U.S. 4,580,790). The undersigned is grateful for the Examiner's helpful interview in which the prior art, particularly the Sasaki reference, was discussed. As explained in more detail below, it is applicants' position that the Sasaki reference, is not analogous prior art to the present invention and, in any event, fails to disclose or provide any motivation to provide

tubular articles having the combination of important features recited in the present claims. As a result of the discussion of these differences, the Examiner noted at the conclusion of the interview that none of the references now of record disclose multi-layer abrasion-resistant products similar to those being claimed. Furthermore, applicants are grateful for the Examiner's acknowledgment that, unless more pertinent prior art is found, she will recommend to her supervisor that the claims be allowed.

**IV. THE CLAIMED INVENTION IS PATENTABLY DISTINCT OVER THE CITED PRIOR ART**

The primary reference cited by the Examiner in the outstanding Office Action (Sasaki, *et al.*) is not analogous to the invention now claimed. More particularly, Sasaki, *et al.* is directed to a tube described as being "useful as medical tubing and in particular useful as an endoscope tube." (Abstract). Such tubing is restricted to one-time use for obvious reasons relating to health and sanitation. Although the Sasaki patent mentions that the tube may possess "superior chemical resistance, heat resistance, and air tightness, as well as superior flexibility and resistance of the inner surface to staining" (Abstract), there is no suggestion anywhere in the patent to an abrasion-resistant article having an inner surface which must be capable of withstanding thousands of cycles to repeated abrasive motion.

Even if there was motivation in the prior art to convert Sasaki, *et al.* to an abrasion-resistant tubular article, the present invention is not obvious over any of the prior art of record. More particularly, there is no motivation in Sasaki, or any of the cited prior art, to form such an article in a multi-layer construction wherein the **outer layer** of the article preferentially contains inorganic particulate material. In fact, the Examiner acknowledges in

the Office Action that "Sasaki, *et al.* do not show fillers." (Office Action, ¶ 10).

Applicants respectfully submit that the Examiner's assertion contained in the last sentence of paragraph 10 is incorrect and therefore cannot be a basis for a finding of a motivation to make the necessary modifications to Sasaki, *et al.* More particularly, the Examiner had previously asserted that it would have been obvious to "employ suitable amounts of the wear-reducing fillers of Giatras, *et al.* or Doose to enhance the anti-friction properties of the outer layers of Sasaki, *et al.*'s tubes." However, there is no suggestion or motivation in any of the cited prior art which would lead a person skilled in the prior art to selectively include an **inorganic** filler only in the outer layer or wall of such an article. The motivation to make such selection is contained in only one place - the present application. Furthermore, the use of inorganic particles in the outer wall, as required by the present claims, would not "enhance anti-friction properties of the outer layers" of the Sasaki, *et al.* tubes, and there is no teaching or suggestion in the prior art to this effect.

Claims 4-6, 8, 11 and 12-17 are further patentably distinguishable over the prior art. More particularly, all of these claims require the presence of **organic particles** in the **inner layer** of the multi-layer tubular articles and inorganic particles in the outer layer of the multi-layer tubular article. The enhanced performance achieved by such a construction is described extensively throughout the present specification. Yet, there is not a single item of prior art which would suggest such a combination. These claims are therefore patentable for this additional reason as well.

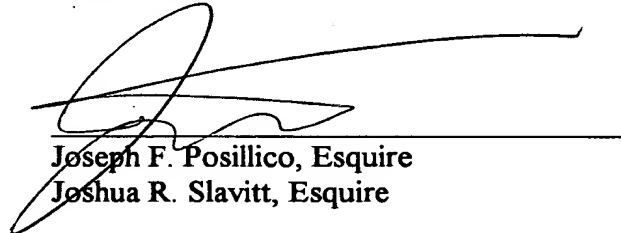
New claims 24-28 depend from claim 1 and are therefore patentable for at least the reasons identified in connection with that claim.

**V. CONCLUSION**

In view of the above amendments and remarks, and further in view of the statements made by the Examiner during the interview, applicants respectfully submit that the present application is in condition for allowance. Accordingly, an early notice thereof is earnestly solicited.

Should the Examiner have any continuing questions about the patentability of the present claims, she is respectfully requested to contact the undersigned by telephone in an effort to expedite resolution of such issues.

Respectfully submitted,



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